

5 CLAIMS

- 10 1. A data storage and retrieval system characterized in that the fluorescent photosensitive materials (fluorescent photosensitive glass and fluorescent photosensitive vitroc ceramic) are used as a support for optical memory.
- 15 2. A data storage and retrieval system as in claim 1 characterized in that it comprises:
- i) a laser (1) 5 for writing;
 - ii) a confocal microscope 2;
 - 20 iii) a vertical scanning system 3 and a radial scanning system 4 used for the movement of writing and excitation beams;
 - iv) a rotating optical memory 1;
 - v) an excitation laser (2) 6 provided with a vertical scanning system 7 for reading the optical memory by one-photon process.
- 25 3. A data storage and retrieval system according to claims 1 and 2 characterized in that the laser (1) is a pulse laser with 100fs laser pulses and uses for writing and reading the two-photon process.
- 30 4. A data storage and retrieval system according to claims 1 and 2 characterized in that the excitation beam is perpendicular on fluorescence beam in the case of one-photon process.
- 35 5. A data storage and retrieval system according to claims 1, 2, 3 and 4 characterized in that the two lasers are tunable in order to operate at a variable frequency.
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